ESO 1766

1991 AGRICULTURAL OUTLOOK

GRAINS AND OILSEEDS

A Discussion Guide for County Agents

Prepared by

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November 1990

SLIDE 1: **WORLD GRAIN AND OILSEED: PRODUCTION AND USE**

A. Markets for U.S. grains and oilseeds are global

1. Since 1980, exports have accounted for:

a. 58% of all wheat utilization

b. 51% of all soybean disappearance

c. 26% of all corn use

d. 4.5 of every 10 acres harvested

e. 40 cents of every dollar of farm income earned from grains and oilseeds comes from export sales

B. Over time, annual worldwide production and use are closely matched

C. Production exceeded use 6 of the last 10 years

1. Stocks accumulate

2. Values (prices) depreciate

a. prices in 1986/87 averaged 40% **below** 1980/81, a period when supply equaled demand

b. prices in 1990/91 will likely average 25% **below** 1980/81

D. Use exceeded production in '87 and '88

1. Production declines reflect:

a. acreage reduction

1) domestic farm programs
2) foreign acreage

b. drought-reduced yields

2. Global stocks were drawn down

a. "seller demand" for inventories, bid up market prices

E. 1990/91 production is expected to exceed use. Stocks are building. Prices are deteriorating.

F. Record global use in 1990/91

1. Growing population assures increased use so long as supply is available

2. Improved diets (more meat) in developing economies

3. Year-to-year declines only twice in last 30 years; drought-related

G. Comparing trends in U.S. production with the rest of the world:

1. The U.S. has accounted for virtually all of the decline in production

2. Since 1979:

a. non-U.S. production has trended **upward** at an average annual rate exceeding 33 million tons

b. U.S. production has trended **downward**

c. U.S. share of world production

--1/4 in 1979
--1/5 in 1990

3. This increasing global competitiveness helps explain the U.S. stake in bringing about international harmonization of farm policies.

a. reduction in production subsidies in other countries

b. spreading the production adjustment process to other countries

SLIDE 2: WORLD COARSE GRAINS: YIELD

A. Global yields continue to set records

1. Yield increasing at 2.8% per year

2. 1960 - 1.4 metric tons per hectare

3. 1990 - 2.5 metric tons per hectare
(record, 80% in 30 years)

SLIDE 3: WORLD CORN: YIELD

A. Yield increasing at 2.8% per year

B. 1960 - 2 metric tons per hectare

C. 1990 - 3.7 metric tons per hectare
(record, up 85% in 30 years)

D. Wheat - 1990 record, 2.5 mt/hectare

E. Oilseeds - 1990 record, 1.5 mt/hectare

SLIDE 4: WORLD COARSE GRAINS: AREA

A. Global acreage is down

1. Total grain (wheat, rice, coarse grains)

a. 1985 peak at 1.8 billion acres

b. down 4% by 1987

c. recovered to 1.7 billion acres in 1990

2. Wheat

a. 1981 peak - 590 million acres

b. down to 538 million in 1988
(U.S. set-aside)

c. recovered to 570 million in 1990

3. Coarse grain

a. 1981 peak at 365 million

b. steady decline to 323 million in 1989

4. Oilseeds are the exception

a. steady global expansion

b. 1980 - 316 million acres

c. 1990 - 363 million acres

SLIDE 5: WORLD CORN: AREA

A. U.S. Share of corn production is declining

1. Area

   a. 1960 - 25% of world corn acres in U.S.

   b. 1990 - 20% of world corn acres in U.S.

2. Production

   a. 1960 - 55% of world corn production in U.S.

   b. 1990 - 42% of world corn production in U.S.

3. Similar reductions for wheat and soybeans

   a. wheat: 1/5 to 1/10

   b. soybeans: 75% to less than 50%

SLIDE 6: CORN: SUPPLY AND USE

	1989/90	% change	projected 1990/91	% change
planted acreage (mil)	72.3	+6.8	74.5	+3
harvested ac. (mil)	64.8	+11.2	66.7	+3
yield (bu/ac)	116.2	+37.4	120.3	+4
production (mil bu)	7,527	+52.7	8,022	+7
carry-in (mil bu)	1,930	-54.7	1,344	-30
total supply (mil bu)	9,460	+2.9	9,368	-1
feed use (mil bu)	4,465	+12.0	4,700	+5
total domestic use (mil bu)	5,755	+10.0	6,020	+5
exports (mil bu)	2,360	+16.4	2,075	-12
total use (mil bu)	8,115	+11.8	8,095	0
carry-out (mil bu)	1,344	-30.4	1,273	-5

A. 1989/90 comments:

1. Production was up 53% because of the '88 drought and increased acreage

   --average yields were near normal, about 3 bu. below trend line

2. Total supplies were up only 3% because of the low carry-in (55% the year earlier)

3. Exports were surprisingly strong, up 16%

   --gain was due mostly to increases to Mexico and other minor importers--not the big buyers like EC, Japan and USSR

4. Upward adjustment in use was shared by domestic feeding and exports

   a. feeding increased about 600 mil. bu., approaching the record 4.7 bil. bu. in '86 and '87

   b. exports increased about 300 mil. bu., only 50 million less than 1980 record

5. Carry-out stocks declined 30% to only about 17% of annual use, lowest since 1983-84 drought year

B. 1990/91 comments:

1. Total supplies are only marginally smaller than last year

   --sharp decline (-30%) in carry-in stocks more than offset production increase

2. Modest recovery in feed use is expected

   a. feeding margins have generally been at or above break-even

   b. dairy, beef, swine, and poultry numbers increasing

   c. lower corn prices than in 1988 or 1989 encourage feeding

3. Feed use is likely to return to high levels of 1986/87 and 1987/88, 4.7 billion bushels

   --corn prices are high enough to discourage wasteful feeding practices

4. Export prospects are the most uncertain at this point

   a. USSR largely absent from market

   b. negative:

      --second successive 10 mil. ton increase in the Soviet crop ('89-90)

      --economic and political chaos

      --inadequate funds for purchase

c. positive:

--probable granting of "most favored nation" status to the USSR

--continued efforts by the Soviets to increase livestock production

d. export shipments have started 1990/91 at a slow pace

--trailing a year-earlier by 20-25% through first couple of months of the marketing year; repeat of last year's slow start

--recovered and eventually increased 16% last year

--recovery doubtful this year; expect 12% decline

--larger supplies of subsidized feed-quality wheat around the world this fall/winter indicate a sluggish export pace is likely

--China is exporting its corn and importing cheap wheat, cutting into our corn exports

5. Carry-out next August 31 will be down 5% from a year earlier

a. may be marginally higher if exports don't recover from slow start

b. but will still be around 16% of annual use

c. tighter market, at or near 15-year low

SLIDE 7: U.S. CORN: FOOD AND INDUSTRIAL USE

A. A bright spot in the corn market

B. Two components of growth

1. sweeteners

2. ethanol

C. A major user and growing

1. currently 15% of usage and important at the margin in determining prices

2. Clean Air Act will promote additional use

   a. one study suggests an additional 13.5 million bushels used for ethanol by 1995

   b. crystalline high-fructose sweetener expected to fuel sweetener use

SLIDE 8: U.S. CORN: ENDING STOCKS/TOTAL USE

A. Another bright spot in market

B. Stocks/use ratio next August 31 expected to be at lowest point since 1975

   1. Market is tight

   2. Foundation for strong upward movement in the event of bad weather anywhere in world

SLIDE 9: CORN: STOCKS-PRICE RELATIONSHIP

A. Graph shows the historic relationship between year-end carry-out stocks and the season average price as a percent of the price support loan rate

B. 1989/90 Ohio price averaged $2.56

   1. This was 163% of the national average loan rate of $1.57

   2. Well above comparable historic levels because:

      --prices had to be high enough to ensure an adequate supply from storage until the 1990 crop was made

      --loan rate was the lowest in 13 years

C. For 1990/91:

   1. With carry-out stocks projected to be in the 1.2-1.3 bil. bu. range, the season average price looks to be in the range of 140-160% of loan

   2. With the loan rate = $1.57, this projects to an average price in the $2.20-2.50 range

SLIDE 10: CORN: OHIO AVERAGE FARM PRICES

A. This shows seasonal pricing patterns

B. The sharp run-up in prices during the early summer drought in 1988 is obvious

--this set the stage for relatively high prices for the 1988/89 marketing year

--drought effect carried over into 1989/90 year; reduced carry-out

C. Prices increased with the spring and summer weather scare in '90

1. Evidence of market tightness

2. Prices retreated once weather scare passed

D. Projections for 1990/91 are based on what is a very stable historic seasonal pattern in years of relatively normal crops that follow normal crops

1. Actual 1990/91 Ohio average prices:

September = $2.38, the same as a year earlier

October = $2.15, lower than a year earlier

2. Prices should reach seasonal highs in late spring, at levels roughly 25-30 cents above expected post-harvest lows in the $2.15 neighborhood

3. Add to that a likely weather scare in May-July, and prices could easily rebound to the $2.75 mark

SLIDE 11: 1991 CORN PROGRAM

A. This graph charts the returns above variable costs for a fairly typical Ohio corn grower participating in the 1991 ARP-Flex program, compared with returns without participation

B. The "break-even" price is about $2.60

--this compares to a preliminary expectation for an average 1990/91 price centering around $2.35

C. The flex acres are planted to corn for calculation purposes. Some acres will go to beans; the market, however, will likely equalize returns from corn and beans.

D. The increased flexibility will likely increase participation in next year's corn program to the 85% range

SLIDE 12: SOYBEANS: SUPPLY AND USE

			projected	
	1989/90	% change	1990/91	% change
planted acreage (mil)	60.8	+3.4	57.7	-5
harvested ac. (mil)	59.5	+3.7	56.5	-5
yield (bu/ac)	32.3	+19.6	33.9	+5
production (mil bu)	1,924	+24.2	1,906	-1
carry-in (mil bu)	182	-39.7	239	+31
total supply (mil bu)	2,109	+24.2	2,145	+2
domestic crush (mil bu)	1,145	+8.2	1,185	+3
total domestic use (mil bu)	1,250	+8.1	1,280	+2
exports (mil bu)	620	+17.7	610	-2
total use (mil bu)	1,870	+11.8	1,890	+1
carry-out (mil bu)	239	+31.3	255	+7

A. 1989/90 comments:

1. Total supply returned to a more normal level, up 24%

   a. crop was normal, average yields and slightly higher acreage

--U.S. accounted for only about 49% of world production, down from 60-65% in late 1970s/early 1980s, and 75% of 30 years ago

b. carry-in was down 40% from the year earlier and down 2/3 from its record high level 2 years earlier

2. Use rebounded 12%

a. increased use came equally from domestic use and exports

b. exports increased 18%

--primary growth in EC imports up 13%

--Japanese imports up 12%

3. Domestic crush increased nearly 8%

a. soymeal exports dropped 5% due to increased South American competition

b. domestic feeding rates increased significantly, up 15%, due to high livestock prices and lower prices for both meal and feed grains

4. Carry-out stocks increased by more than 30%, to 13% of annual use

--about equal to long-term average, 15%

B. 1990/91 comments:

1. Acreage down 5% because of higher carry-over and relatively low 1989/90 prices

--down 14 million acres from '79 peak

2. Production down about 1% because of acreage adjustment

--yet, U.S. share of world total fell to about 47%

--South American production fairly steady

3. Total supplies up only 2%, due to higher carry-over

--increased use will strengthen prices

--have regained 45% of the use lost due to '88's short supply

4. Domestic crush has recovered to previous record use

   a. soymeal feeding will increase marginally

      --slight expansion in all classes of livestock

   b. soymeal exports will be up as East Europe and USSR attempt to expand livestock sector

5. Strong domestic demand for soyoil will continue

6. With only modest increase in disappearance and decreased production, carry-out stocks look to fall to the 255 mil. bu. level

   --13% of annual use

   --the market is tight and will respond rapidly to new demand or crop damage

SLIDE 13: SOYBEANS: STOCKS-PRICE RELATIONSHIP

A. 1989/90 prices averaged $5.80 in Ohio

   --129% of the $4.50 national average loan rate

   --about in line with historic price behavior when supplies are around 112% of use

B. With 1990/91 total supplies around 113% of expected use:

   --prices for the season should average 125-135% of loan

C. With the 1990 national average loan = $4.50, this implies a season average price in the $5.75-6.00 range

SLIDE 14: 1990/91 SOYBEAN PRICE PROSPECTS

A. Soymeal prices are projected to be in the $165-185/ton range

   1. Over the past 15 years, soy meal:corn price ratio has averaged about 2:1 (price per pound)

   2. In recent years, the ratio has trended irregularly upward

--averaged 2.6 over the past 4 years, but biased upward by unusually low corn prices in 1986, 1987

3. Projections are based on corn price expectations in the $2.20-2.50 range and the meal:corn price ratio in the 2.2:1 to 2.3:1 range

B. Soyoil prices through next summer are trading in roughly the 20-23 cent/pound range

1. Soyoil prices seldom move much above the 20 cent level unless carry-out stocks fall below roughly 1-1.2 bil. pounds

2. Next year's carry-out is estimated at 1.1 billion pounds

C. Deducting a 30-50 cent/bu. crush margin from the projected product values yields a whole bean value in the $5.75-6.00 range, about the same as that indicated by the stocks:loan ratio, above

SLIDE 15: SOYBEANS: OHIO AVERAGE FARM PRICES

A. 1987/88 shows the sharp price run-up during the drought of 1988

B. During 1988/89, prices dropped off rapidly

1. High prices in the summer of 1988 quickly discouraged buyers

2. Buyers could more easily turn to alternative supplies than in earlier droughts because of the declining U.S. share of world production

3. Average monthly prices ended the year $2.30 below where they started

4. More clearly than for corn, this demonstrates the "long market tail" in short crop years

C. 1989/90 prices exhibited a fairly normal return to a reasonably consistent pattern in previous normal crop years that follow short crop years

--storage, except for the drought rise in July and August

D. Actual 1990/91 prices:

September = $6.07

October = $5.90

E. Post-harvest prices normally wouldn't bottom out until November or December

--strong farmer holding at harvest, October may be close to this year's low

F. A May-June high of about $6.20 is necessary to fully recover post-harvest holding costs

1. The normal seasonal pattern shows this as a definite possibility

2. The usual spring/summer weather scare provides a lift for prices beyond holding costs

3. But, as this is after next spring's South American harvest, it will be affected by:

   a. size of the 1990 South American crop,

   b. timing of sales of the 1990 South American crop on world markets, and

   c. size of 1990 U.S. plantings, up possibly 2-2.5 million flex acres; downward price pressure as crop matures in July and August

4. Because of the uncertainty, buying a July call option may be a less risky way to speculate on price increases than storing the crop

SLIDE 16: WHEAT: SUPPLY AND USE

	1989/90	% change	projected 1990/91	% change
planted acreage (mil)	76.6	+17.0	77.3	+1
harvested ac. (mil)	62.2	+16.9	69.4	+12
yield (bu/ac)	32.7	-4.1	39.6	+21
production (mil bu)	2,037	+12.4	2,744	+35
carry-in (mil bu)	702	-44.3	536	-24
total supply (mil bu)	2,762	-10.8	3,301	+20
domestic food (mil bu)	731	+2.2	740	+1
total domestic use (mil bu)	992	+1.7	1,253	+26
exports (mil bu)	1,233	-13.1	1,125	-9
total use (mil bu)	2,225	-7.1	2,378	+7
carry-out (mil bu)	536	-23.7	923	+72

A. 1989/90 comments:

1. Total supplies, down 11%, were the lowest since 1975
2. Production was up 12%, but the lingering effect of the '88 drought reduced carry-in by 44%
3. Domestic use was up marginally, but exports continue their freefall by another 13%; total use fell by 7%
4. Carry-out was less than 550 mil. bu., lowest in 15 years

a. in the past 3 years, carry-over stocks have been reduced by nearly 1.3 bil. bu., more than half of that during the past 2 years

b. prices have risen 45-50% in the same period--large stocks do affect prices

B. 1990/91 comments:

1. Increased production more than offset the lower carry-over

a. a 12% increase in harvested acreage

b. record yield, 39.6 bu./acre

c. a 35% increase in total production

2. Total use will be up because of the excess supply situation (i.e. lower prices)

a. domestic feed use will increase significantly (almost triple)

--feed use won't be confined to the usual off-quality/damaged grain

--price substitution for corn

b. exports were down about 27% through first 5 months of the marketing year

--recovery is badly needed, or price situation will continue to deteriorate

3. Carry-out looks to nearly double

--will keep a lid on prices

SLIDE 17: WHEAT: STOCKS-PRICE RELATIONSHIP

A. 1989/90 prices averaged $3.75

--182% of the national average loan rate of $2.06

B. With year-ending stocks increasing toward 900 mil. bu., the season average prices looks to be roughly 1.5 times the national average $1.95 loan rate; $2.60-2.90

C. Soft red winter wheat prices will probably trail national averages by 10% or more

--SRW supplies are down marginally, exports down 17%

D. Ohio prices should average in the $2.60-2.90 range for the 1990/91 marketing year

SLIDE 18: WHEAT: OHIO AVERAGE FARM PRICES

A. Prices have trended down since the '88 drought

B. The exception was last winter, when prices recovered to $4 level until evidence of this year's good crop began to materialize

--1990/91 actual prices:

June = $3.21

July = $2.85

August = $2.61

September = $2.55

October = $2.50

C. Seasonal price high in the $2.80-2.90 range expected in early 1991

1. Not likely to cover post-harvest holding costs

2. Increased ARP (15%) acreage in 1991 will cause acreage and production to decline 10-15%

SLIDE 19: 1991 WHEAT PROGRAM

A. Major program changes:

1. ARP increased from 5% to 15%

2. Flex acres

a. no flex - 12-month deficiency on 85% of base acreage

b. 15% flex to wheat - 5-month deficiency on 70% of base acreage plus 15% at market price

c. 15% flex to alternate crop - 5-month deficiency on 70% of base acreage plus 15% times income from alternative crop

3. Target price held at $4.00

4. Loan rate likely up from $1.95 to $2.10

B. Break-even price

1. 15% ARP is about $3.55

2. 15% ARP + 15% flex to wheat is about $3.60

3. 15% ARP + 15% flex to corn/beans is about $3.75

4. All well above expected price for 1991 crop in the mid to upper $2 range, assuming normal weather

5. Program gain is substantial, but options are not equal

a. 15% flex in corn and/or beans is best

b. 15% flex in wheat is worst (excluding non-participation)

c. if want to harvest all 85% of base as wheat, elect no-flex, 12-month deficiency

C. Assures less planted acreage

SLIDE 20: 1991 FLEX ACRES ECONOMICS

A. Projections are based on:

1. Fairly typical crop yields in Ohio

2. Price expectations for 1991 crops that assume normal weather and usual price relationships

3. Variable costs based on Extension's Ohio budgets adjusted somewhat to reflect probably changes in input prices

B. Returns above variable costs (or returns to fixed costs, including land), based solely on market prices (no deficiency payments on flex acres):

1. Show a modest advantage for corn compared to soybeans

a. if use 2.35 corn and 6.50 beans, advantage shifts to beans

b. market will likely equalize

2. Show a significant advantage for either soybeans or corn compared to wheat

SLIDE 21: 1991 FLEX ACRES ECONOMICS

A. Comparisons are added for two minor crops: oats and canola

1. Market returns show little incentive for oats

--target price of $1.45 is not high enough to make the crop competitive with any of the alternatives, with our without government payments

2. Canola compares surprisingly well with corn and soybeans

3. But, considerable risk with canola

a. production techniques are still largely "trial and error"

b. market is not well developed

--relatively few experienced handlers

--crushers are just getting established

--essentially no secondary market to remove supplies that exceed crusher demand

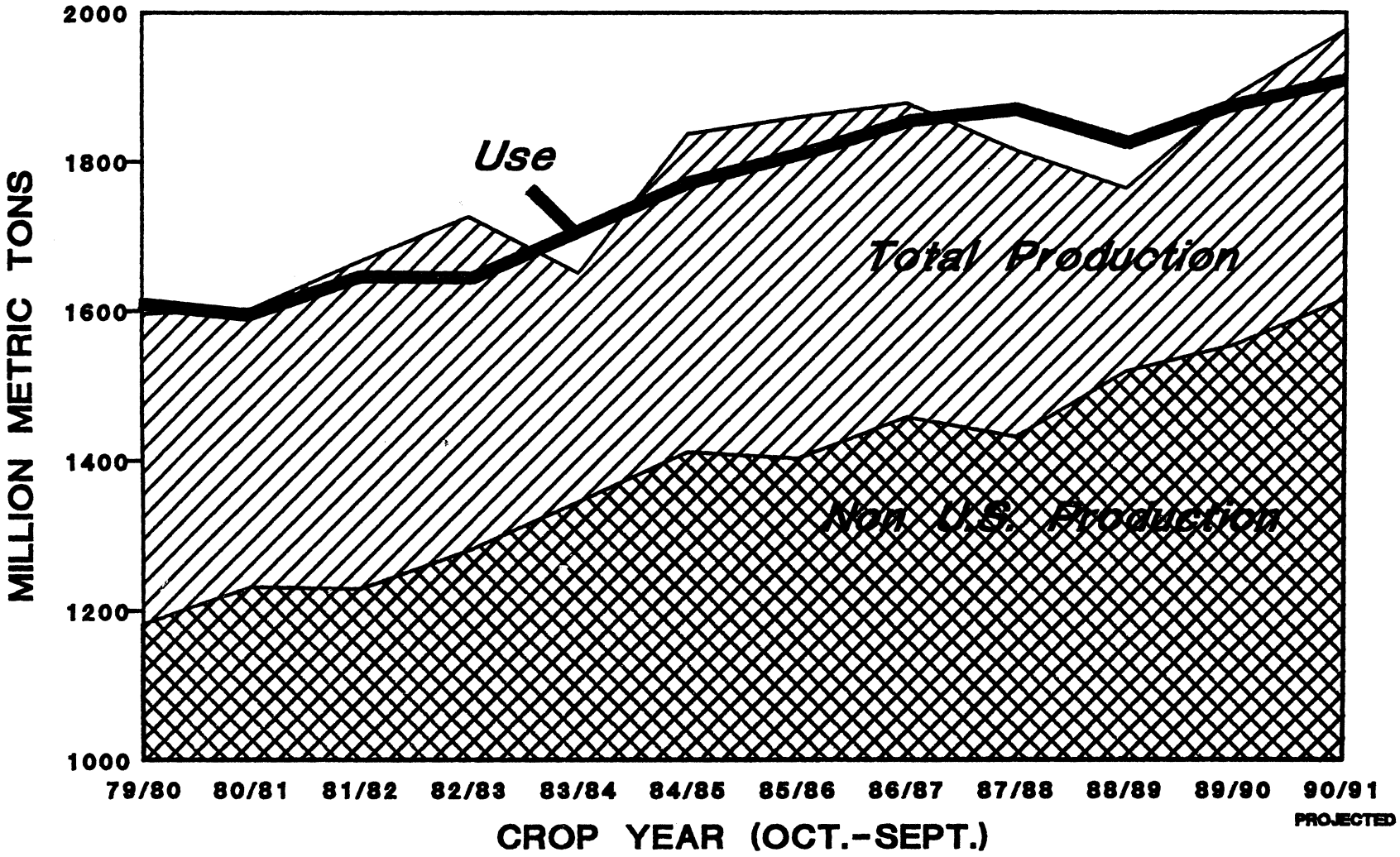
--price relationship between canola oil and soyoil is still tentative

4. Nonetheless, potential market returns suggest that canola may be worth a trial for those willing to experiment and take some additional risks (but too late for this year's fall planting)

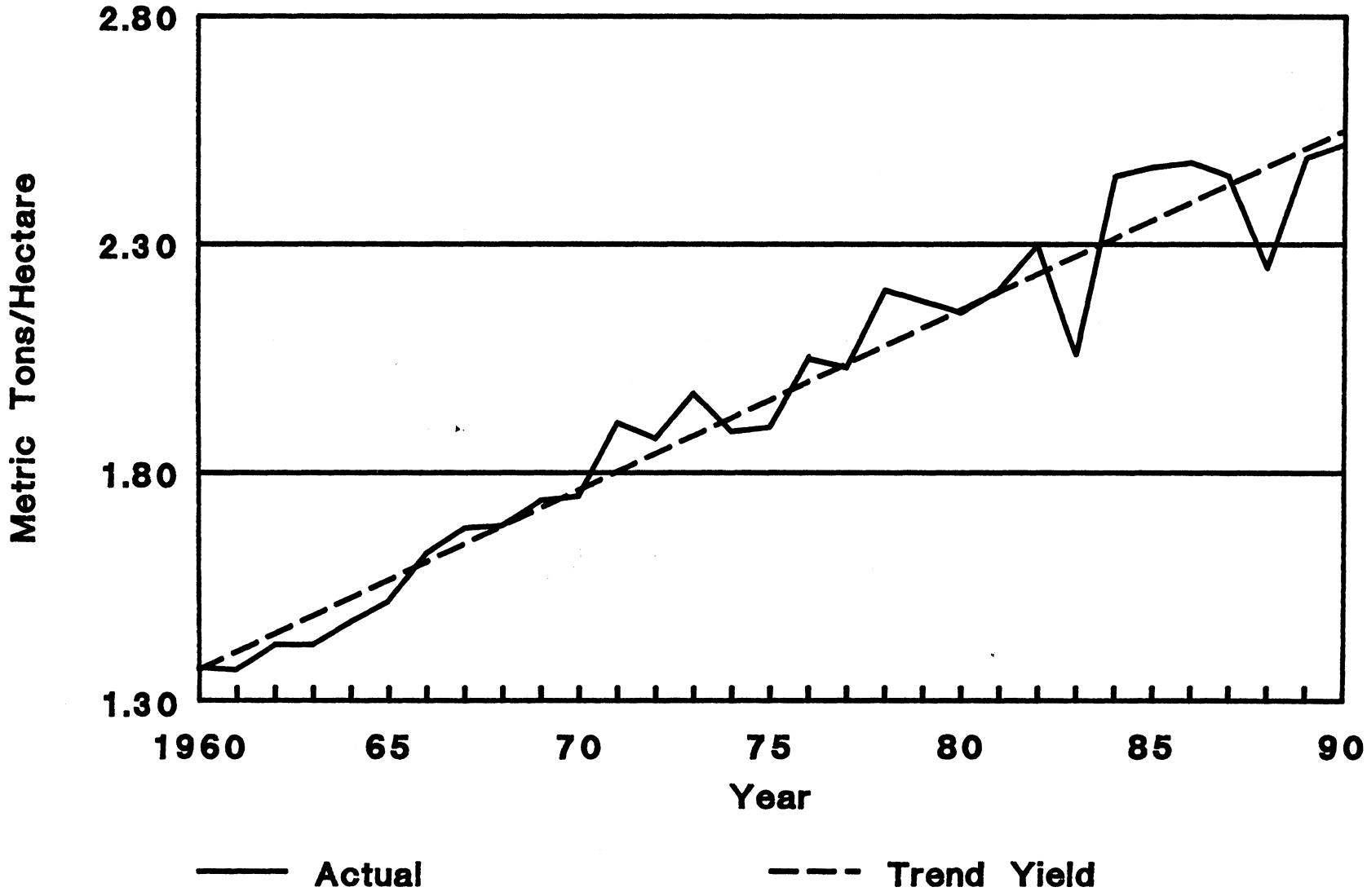
B. Since enactment of the 1985 farm bill, when deficiency payments were included for corn, wheat, and oats program participants, the economic incentive to plant corn on all possible permitted acres has been obvious

C. The 1991 triple-base plan combined with the current market outlook makes the decision less clear with respect to corn or soybeans or wheat and/or corn flex acres

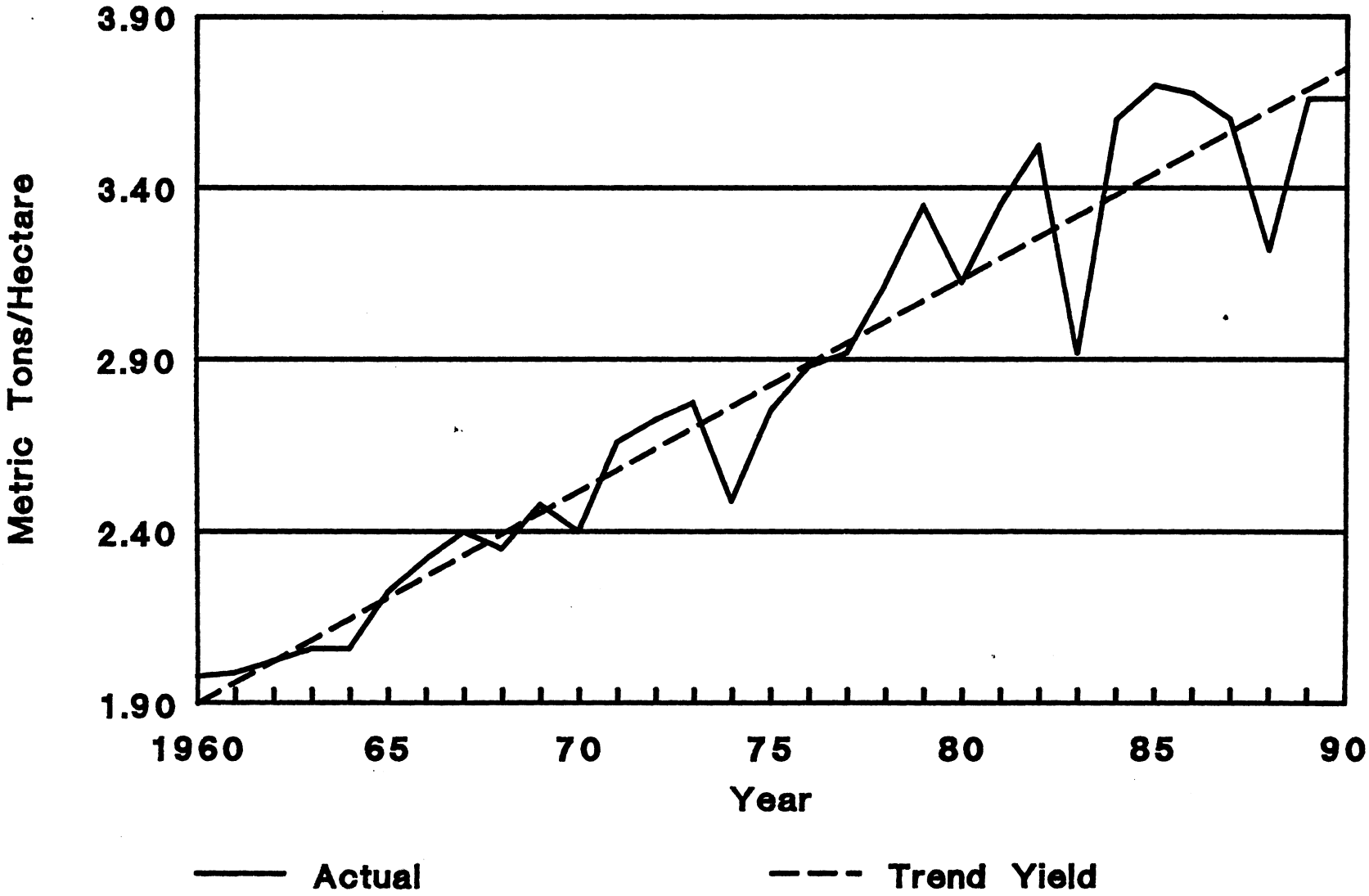
WORLD GRAIN AND OILSEED PRODUCTION AND USE



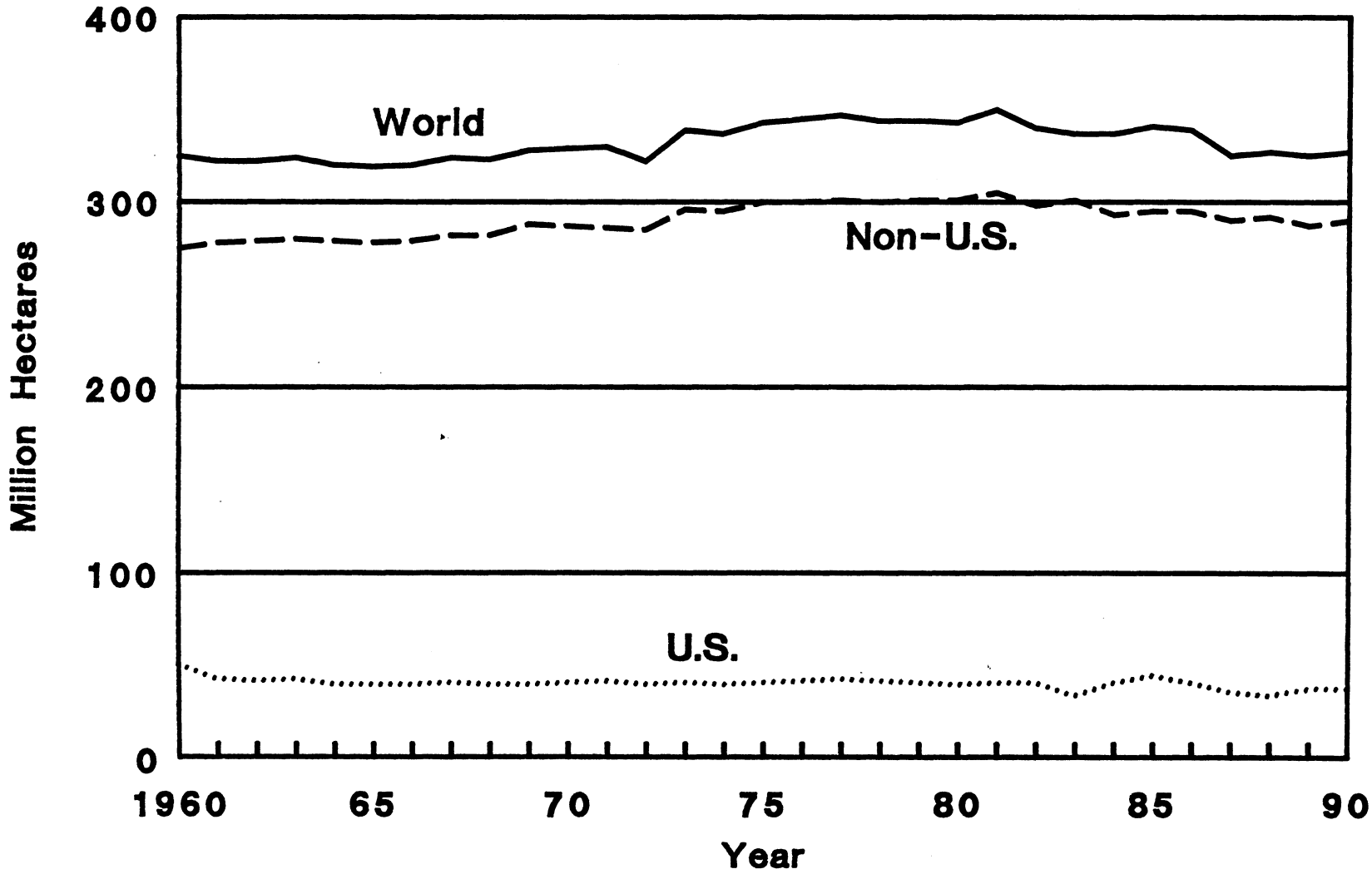
WORLD COARSE GRAINS
YIELD



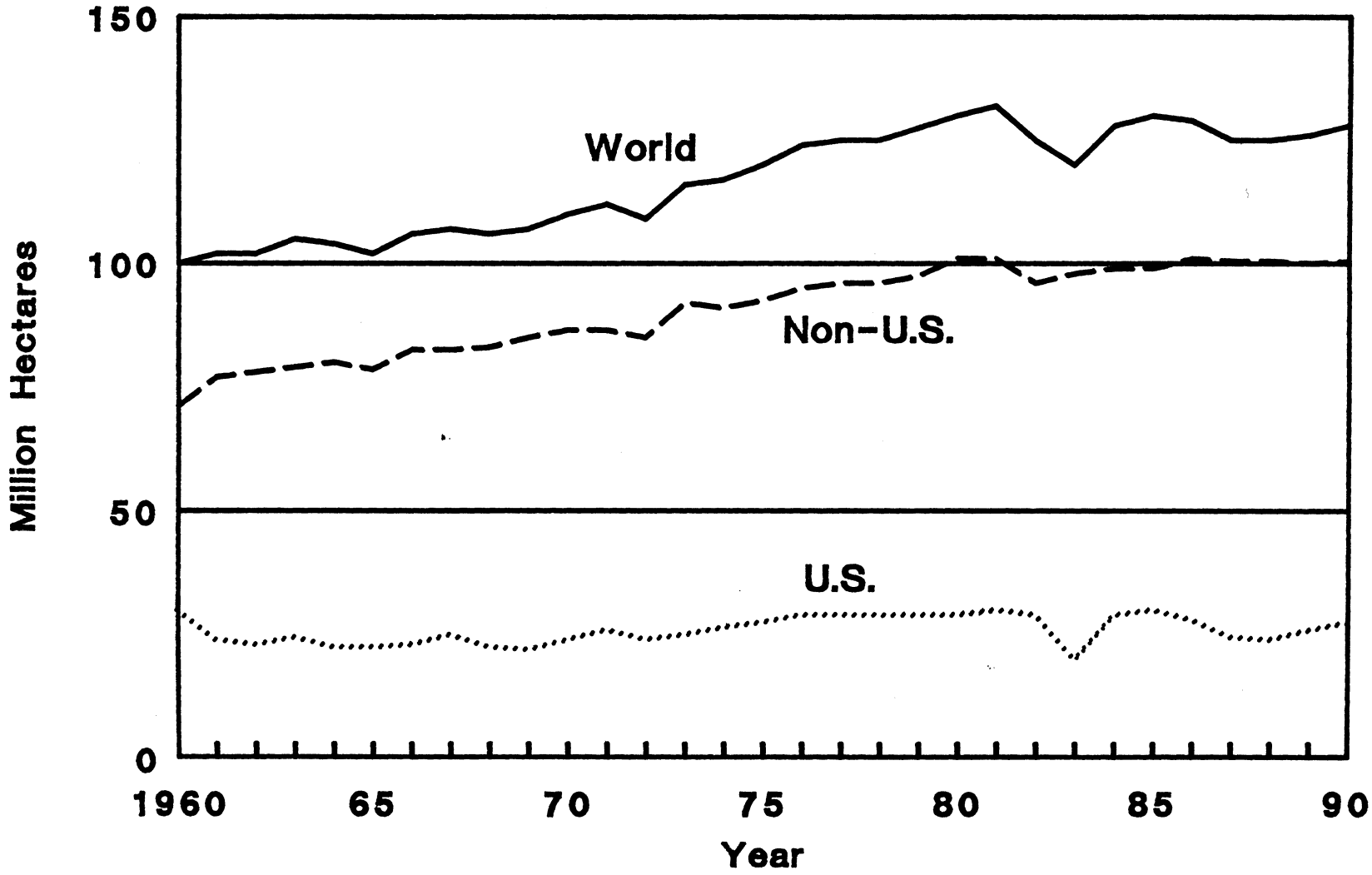
WORLD CORN
YIELD



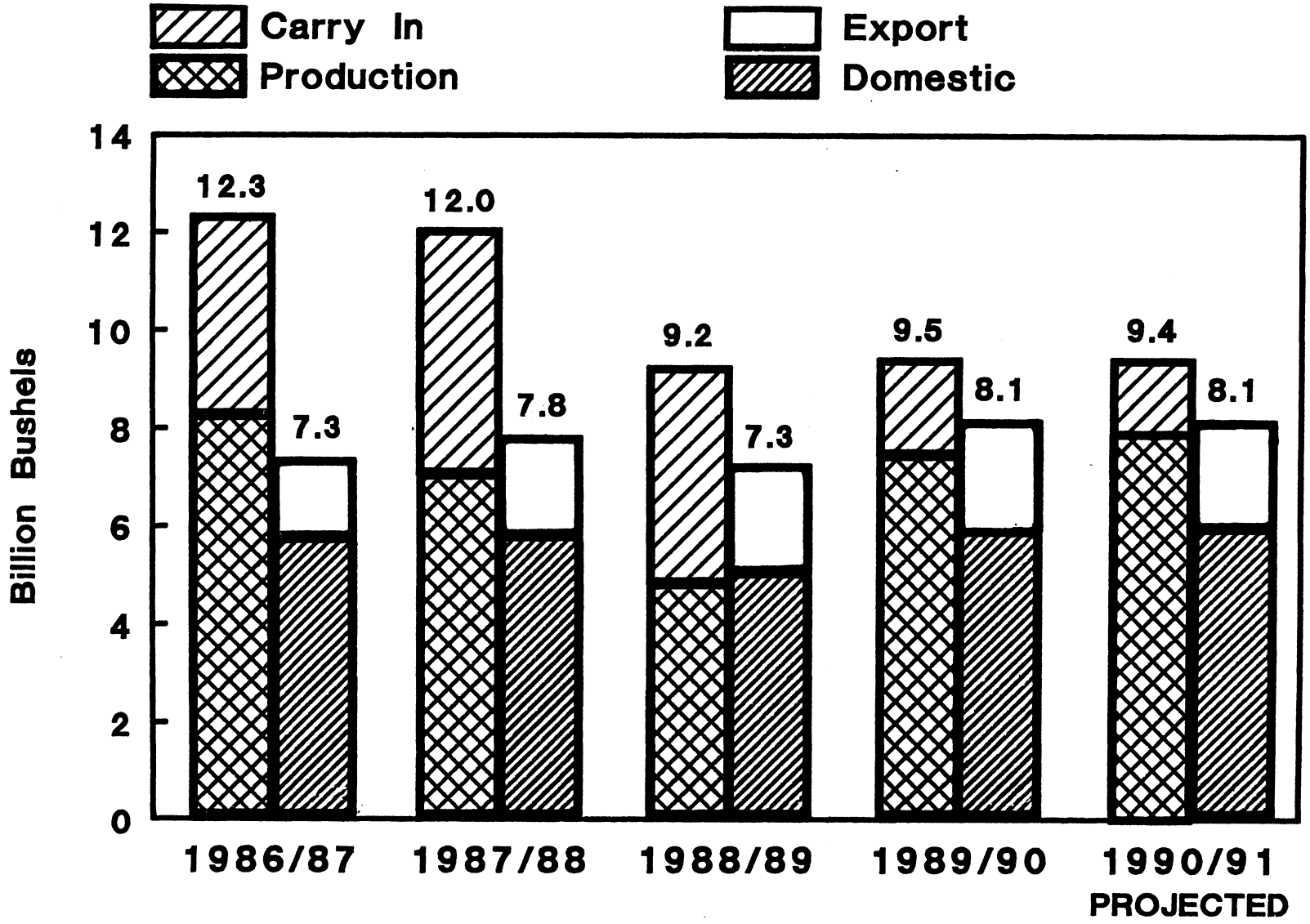
WORLD COARSE GRAINS
AREA



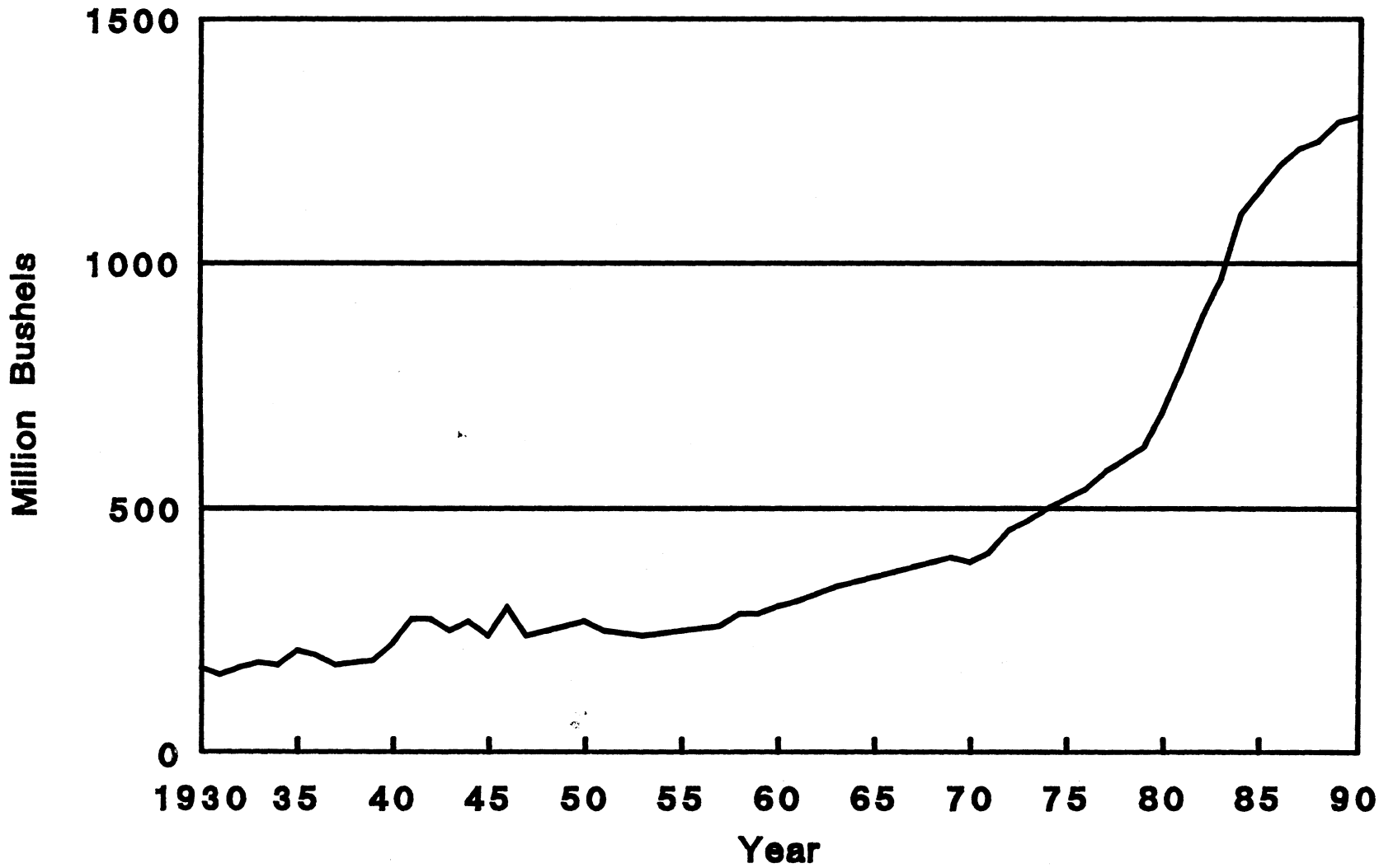
WORLD CORN
AREA



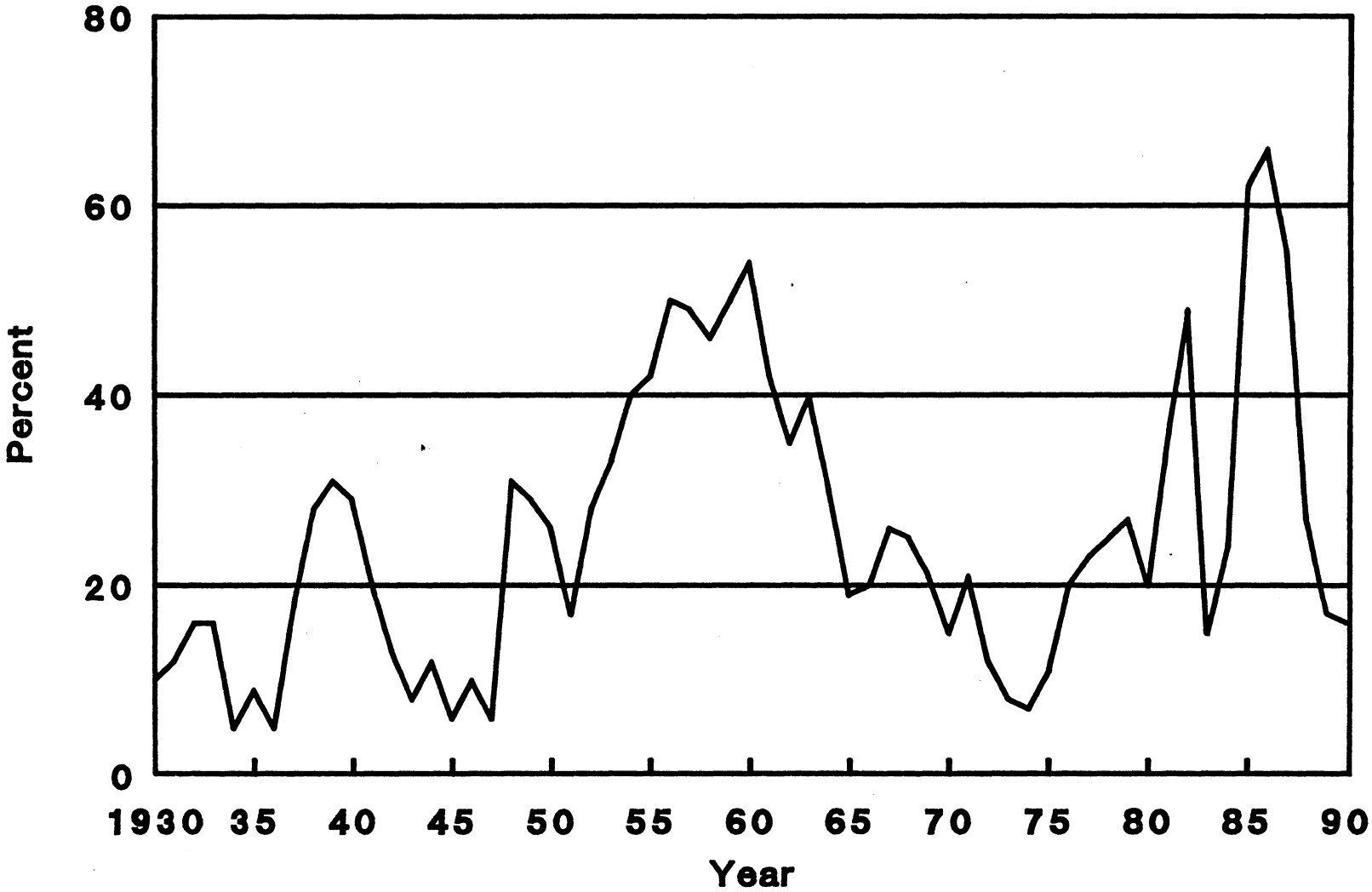
Corn: Supply and Use



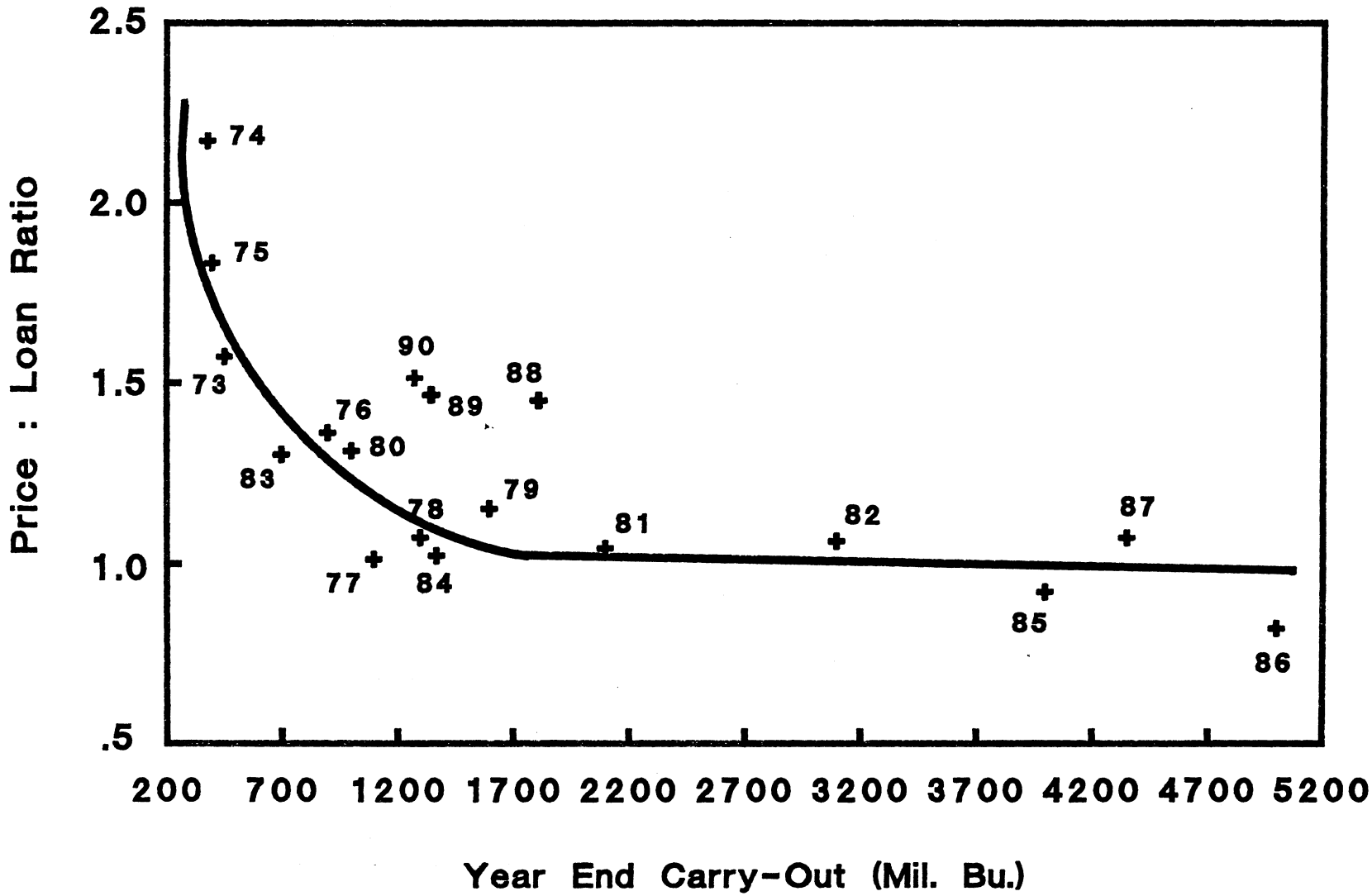
U.S. CORN
FOOD & INDUSTRIAL USE



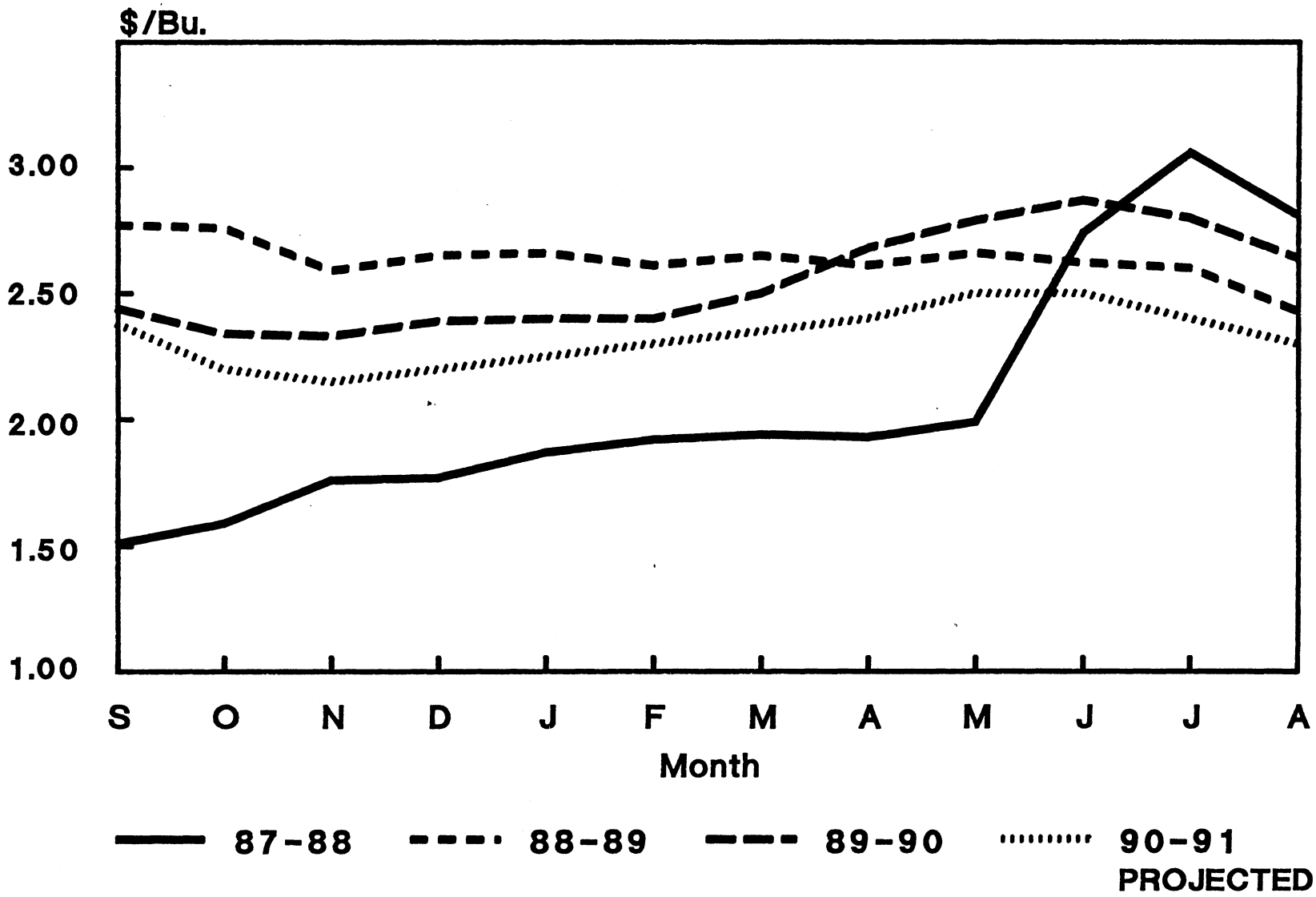
U.S. CORN
ENDING STOCKS/TOTAL USE



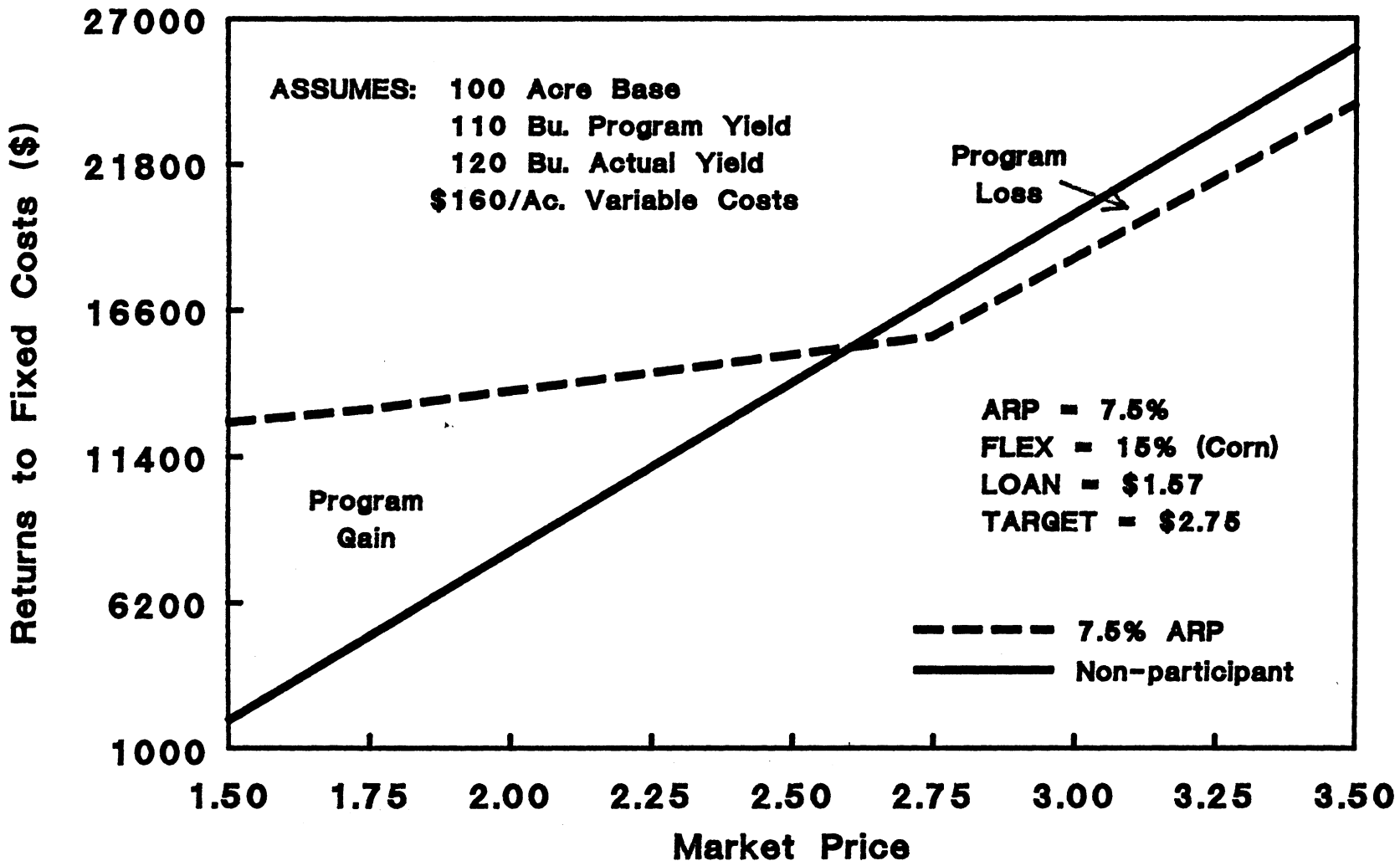
Corn: Stocks-Price Relationship



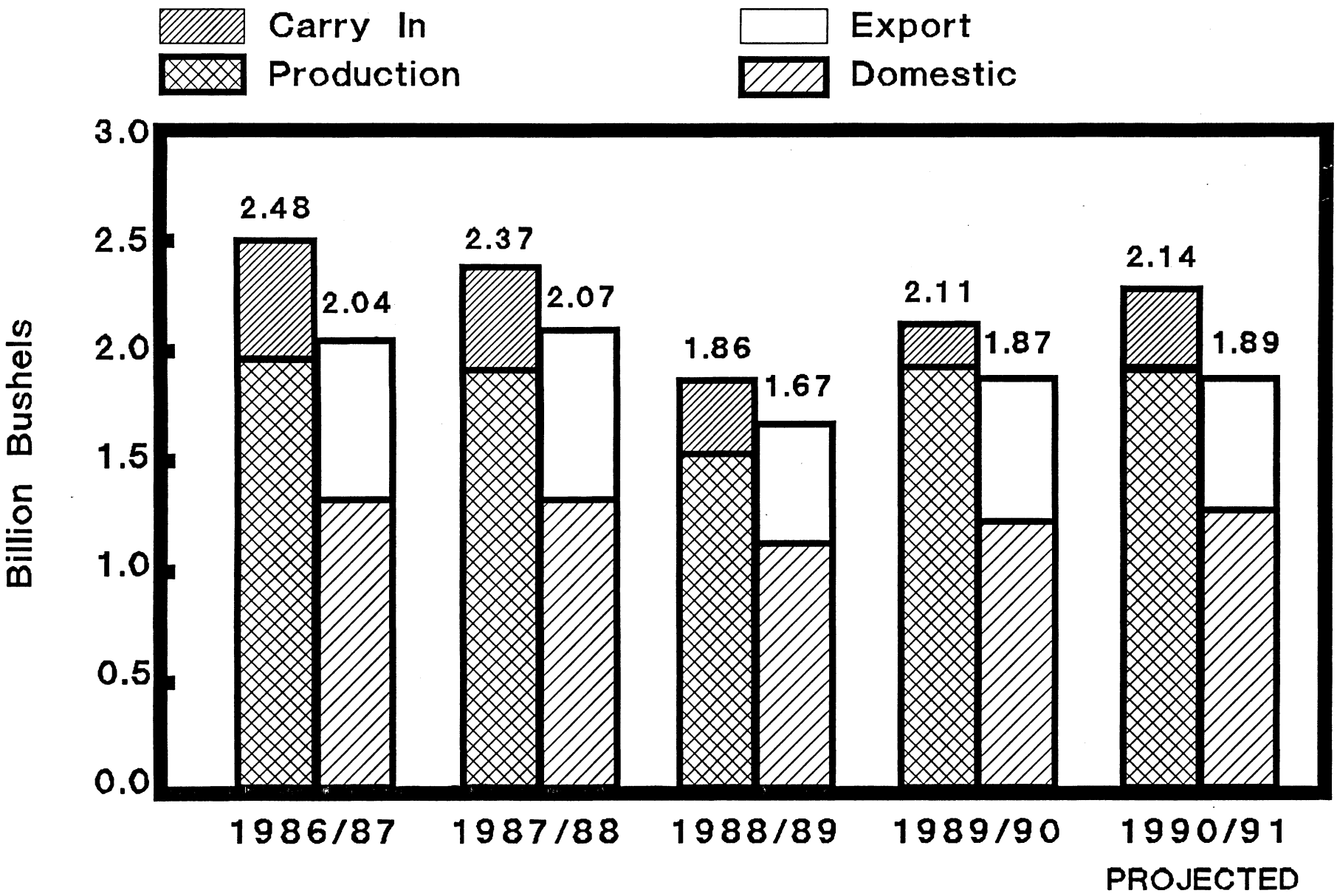
CORN: OHIO AVERAGE FARM PRICES



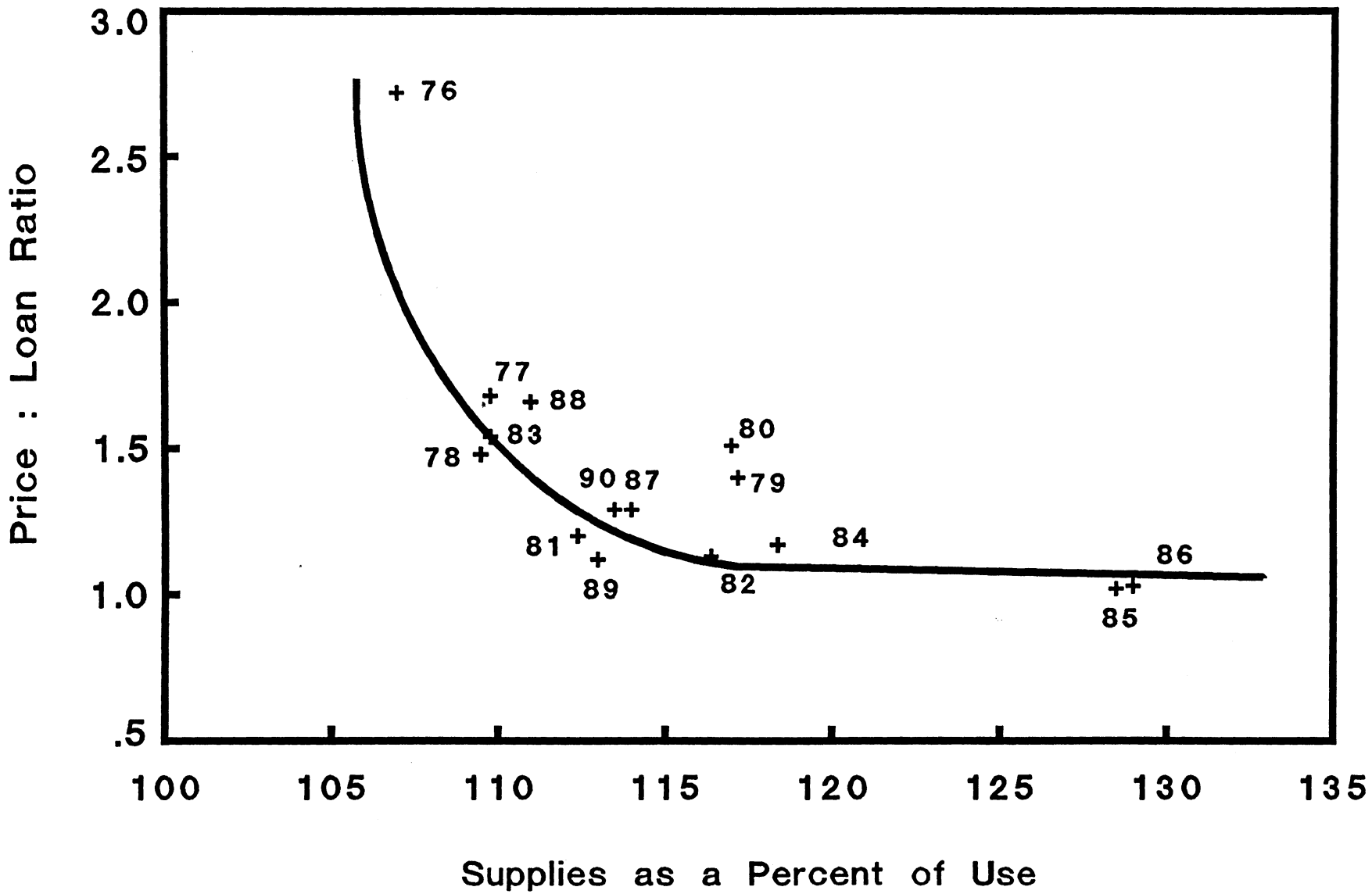
1991 CORN PROGRAM



Soybeans: Supply and Use



Soybeans: Stocks-Price Relationship

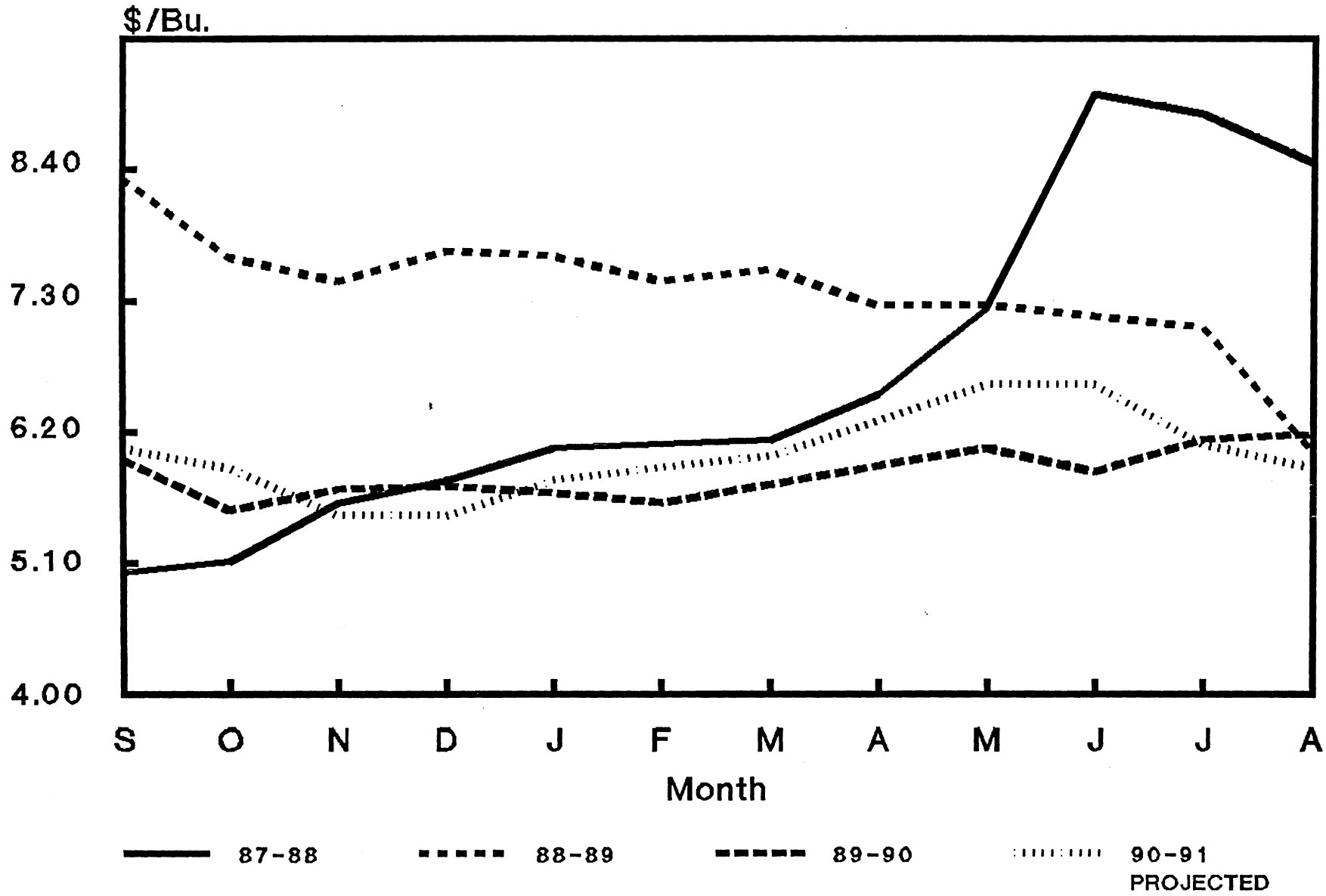


1990-91 SOYBEAN PRICE PROSPECTS
(Decatur, Ill.)

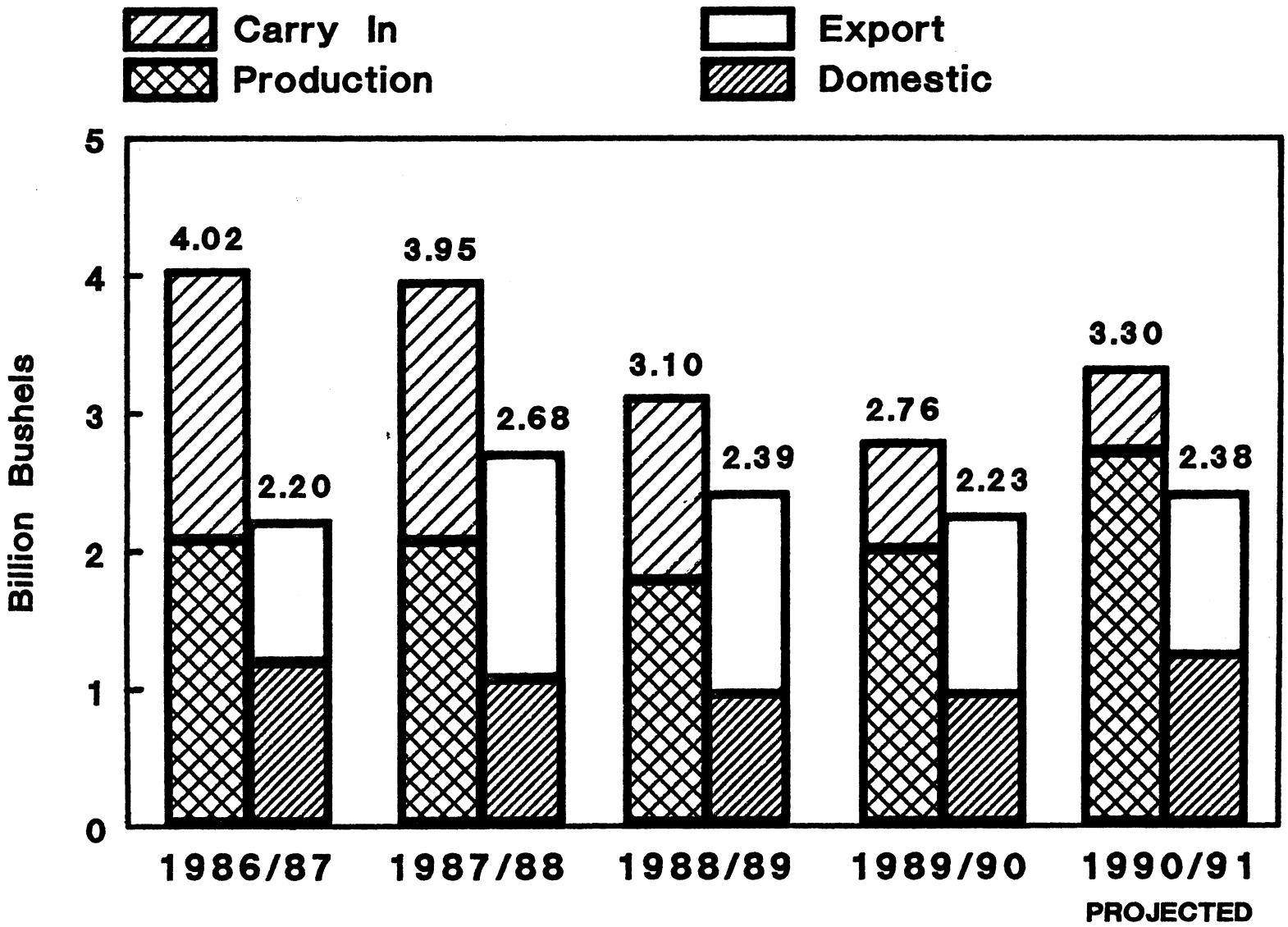
	Per Bu.	Price	Value
Meal (Ton)	47.5#	$175-195	$4.16 to 4.63
Oil (Lb.)	11.0#	$0.23-0.25	$2.53 to 2.75
Total			$6.69 to 7.38

Minus Crushing Margins

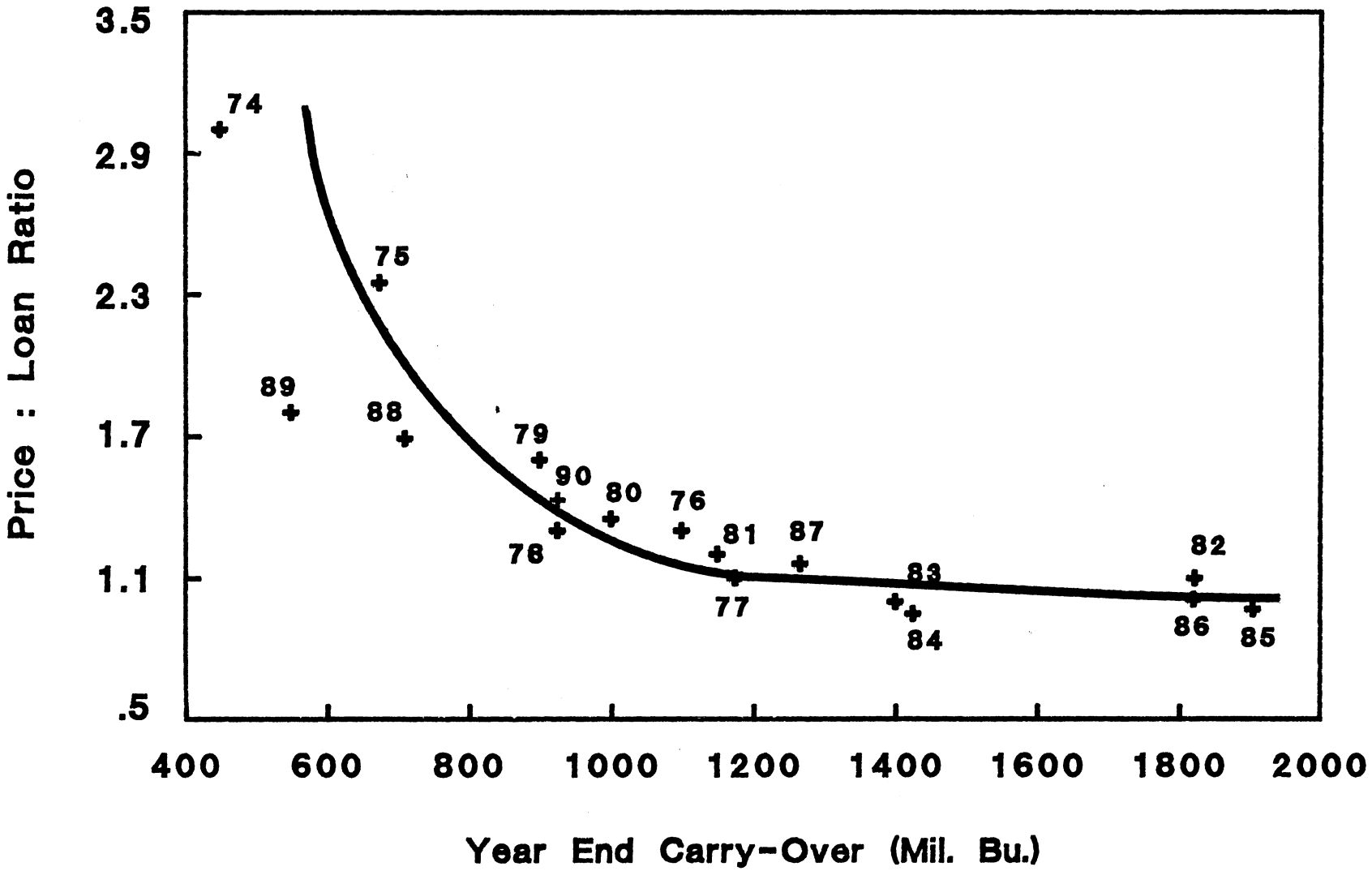
SOYBEANS: OHIO AVERAGE FARM PRICES



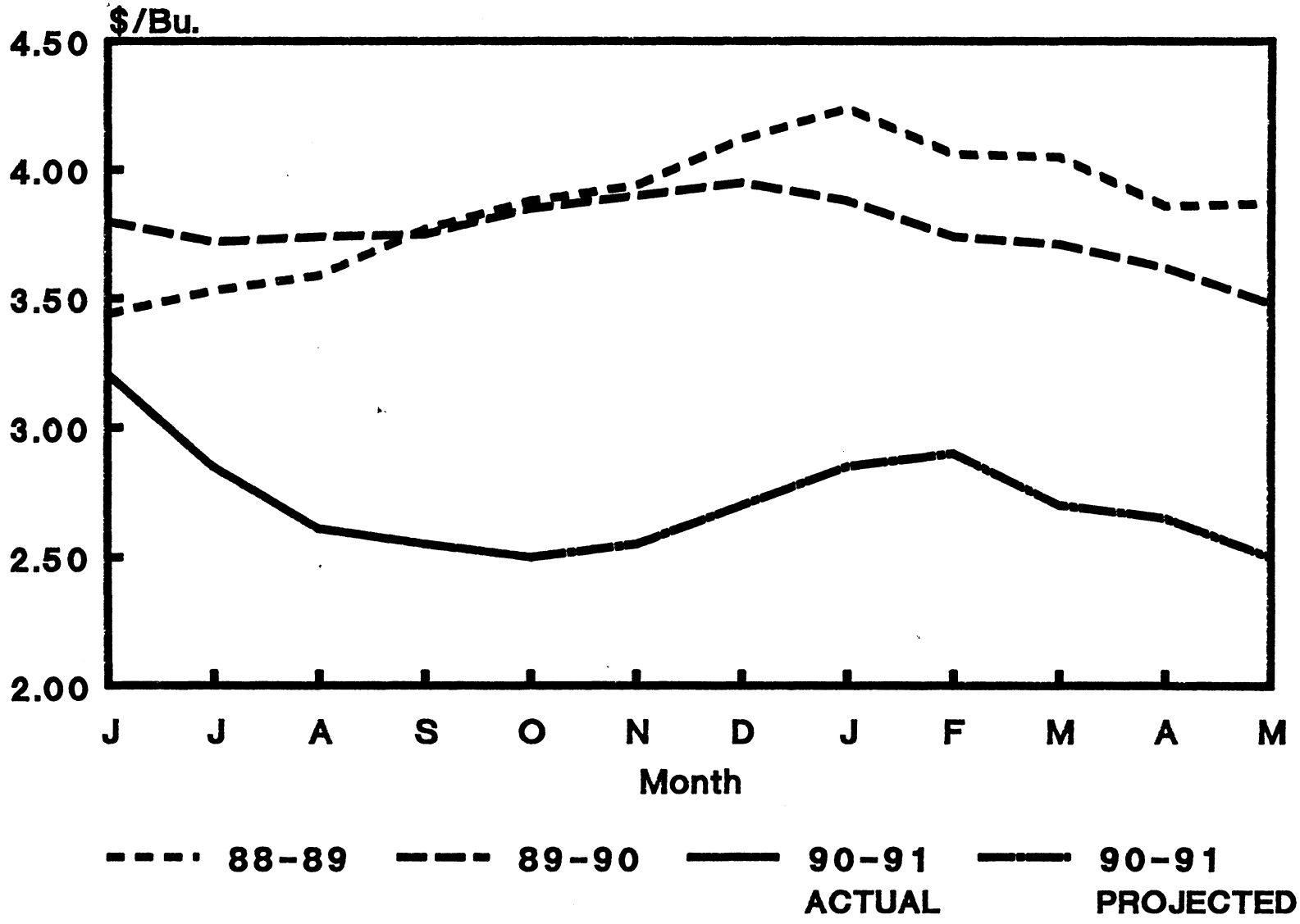
Wheat: Supply and Use



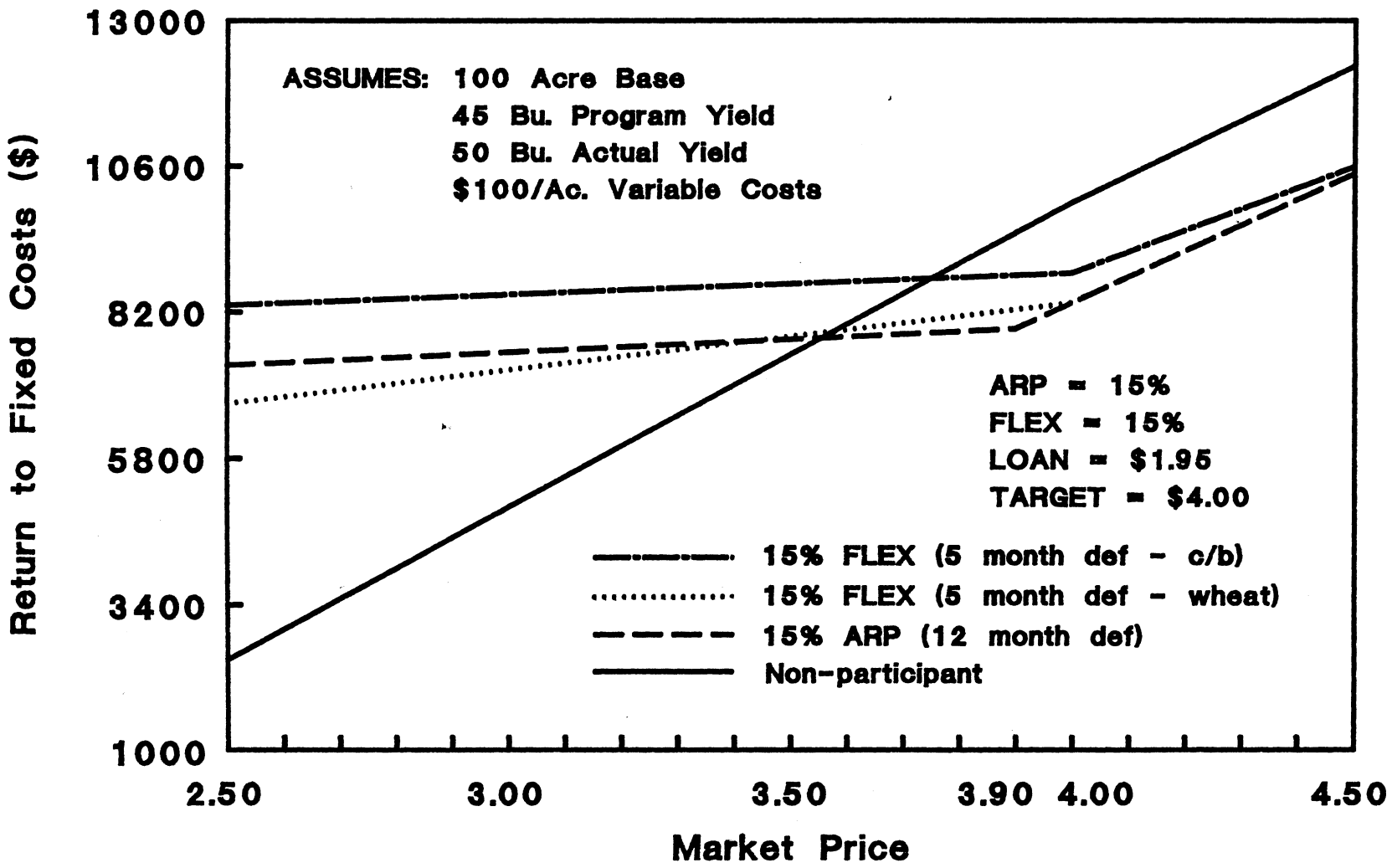
Wheat: Stocks-Price Relationship



WHEAT: OHIO AVERAGE FARM PRICES



1991 WHEAT PROGRAM



1991 FLEX ACRES ECONOMICS

per acre	Corn	Soybeans	Wheat
Yield (bu.)	120	40	50
Market Price ($/bu.)	2.50	6.00	3.00
Market Returns ($)	300	240	150
Variable Costs ($)	160	115	100
Market Returns to Fixed Costs ($)	140	125	50

1991 FLEX ACRES ECONOMICS

per acre	Corn	Soybeans	Wheat	Oats	Canola
Yield (bu.)	120	40	50	75	40
Market Price ($/bu.)	2.50	6.00	3.00	1.40	5.50
Market Returns ($)	300	240	150	105	220
Variable Costs ($)	160	115	100	70	95
Market Returns to Fixed Costs ($)	140	125	50	35	125